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28990 Investigation of Environmental  
Change Pattern in Japan.  
(Classification of Shorelines)

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## Classification of Shorelines

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### 1. Introduction

In this report, the analysis based on the CCT is introduced. In succession to the first report of the analysis of the reclaimed lands, rias shore-lines and sand beaches in the Ise Bay, the CCT data were applied to the same areas.

### 2. Techniques

The CCT digital images of each MSS band were depicted by the newly provided computer program (Fig.1 - Fig.10).

Density division and corresponding symbols assigned are given in Table 1.

### 3. Accomplishments

#### a. Reclaimed lands

Fig.1 to Fig.4 show the CCT digital images of reclaimed lands of band 4 to band 7, respectively, and the areas correspond to a part of Fig.3 (Western part of Nagoya Harbor) in the previous report.

Some parts of reclaimed lands which could not be identified in the B and W bulk films of band 7 (refer to Fig.4 of the first report) are clearly separated from the sea as shown in Fig.4.

#### b. Rias shore-lines

Fig.5 and Fig.6 are the digital images of band 4 and band 7, respectively. They correspond to Fig.1-B of the first report.

Fig.6 shows that the border separated by the values of the density greater than 3 of band 7 gives good representations of the shore-line.

On the other hand, the Fig.5 shows contaminated water near shore-lines, and the distinction from the land cannot be found.

### c. Sand beaches

Fig.7 to Fig.10 correspond to the four MSS bands, two of which, band 4 and band 7, appeared in the first report. The depicted sand beach shows good linear feature of the shore-line.

The dirt of sea water by sands is shown by the symbol \* (its density values are 19 and 20) in Fig.7 of band 4. In the image of band 5 (Fig.8), the dirt of sea water is shown by the symbol - and +, then the discrimination between the sand beach and dirty water is more prominent.

### 4. Significant Results

(1) Rias shore-lines can be interpreted from the fine depiction of their complex features in the image of band 7 (Fig.6).

(2) Sand beaches can be discriminated from their linear nature, and the similarity of sand beaches among the all band is very good. The differences of the both shore-lines of band 4 (Fig.7) and band 7 (Fig.10) are shown in Fig.11.

### 5. Publications

No.

### 6. Problems

Relationship between the CCT digital image and the ground characteristics of the reclaimed lands.

### 7. Data Quality and Delivery

No.

### 8. Recommendations.

No.

### 9. Conclusions

The CCT digital images exposed far detailed ground information as compared with the bulk films, the CCT data suggest eminent possibilities of classification of the coastal areas.



Symbol Band	Blank	-	+	✕	H	✕	@	✕	H	✕
Band 4	0 - 14	15 - 16	17 - 18	19 - 20	21 - 22	23 - 25	26 - 30	31 - 40	41 - 50	51 - 127
Band 5	0 - 12	13 - 14	15 - 16	17 - 18	19 - 22	23 - 26	27 - 32	33 - 40	41 - 50	51 - 127
Band 6	0 - 6	7 - 8	9 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 40	41 - 50	51 - 127
Band 7	0 - 1	2 - 3	4 - 5	6 - 7	8 - 9	10 - 12	13 - 15	16 - 20	21 - 30	31 - 63

Table 1. Density division and symbols.

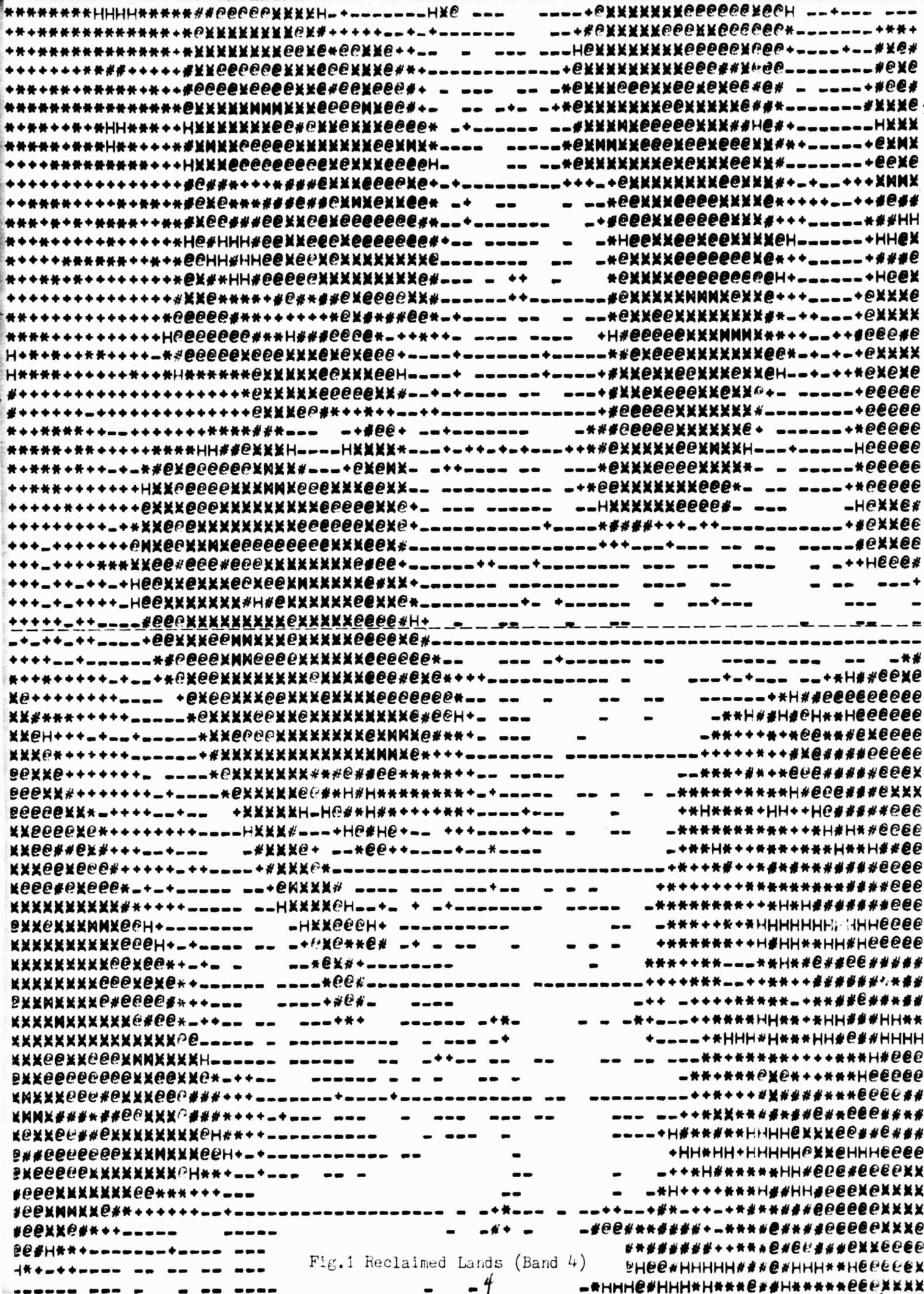


Fig.1 Reclaimed Lands (Band 4)

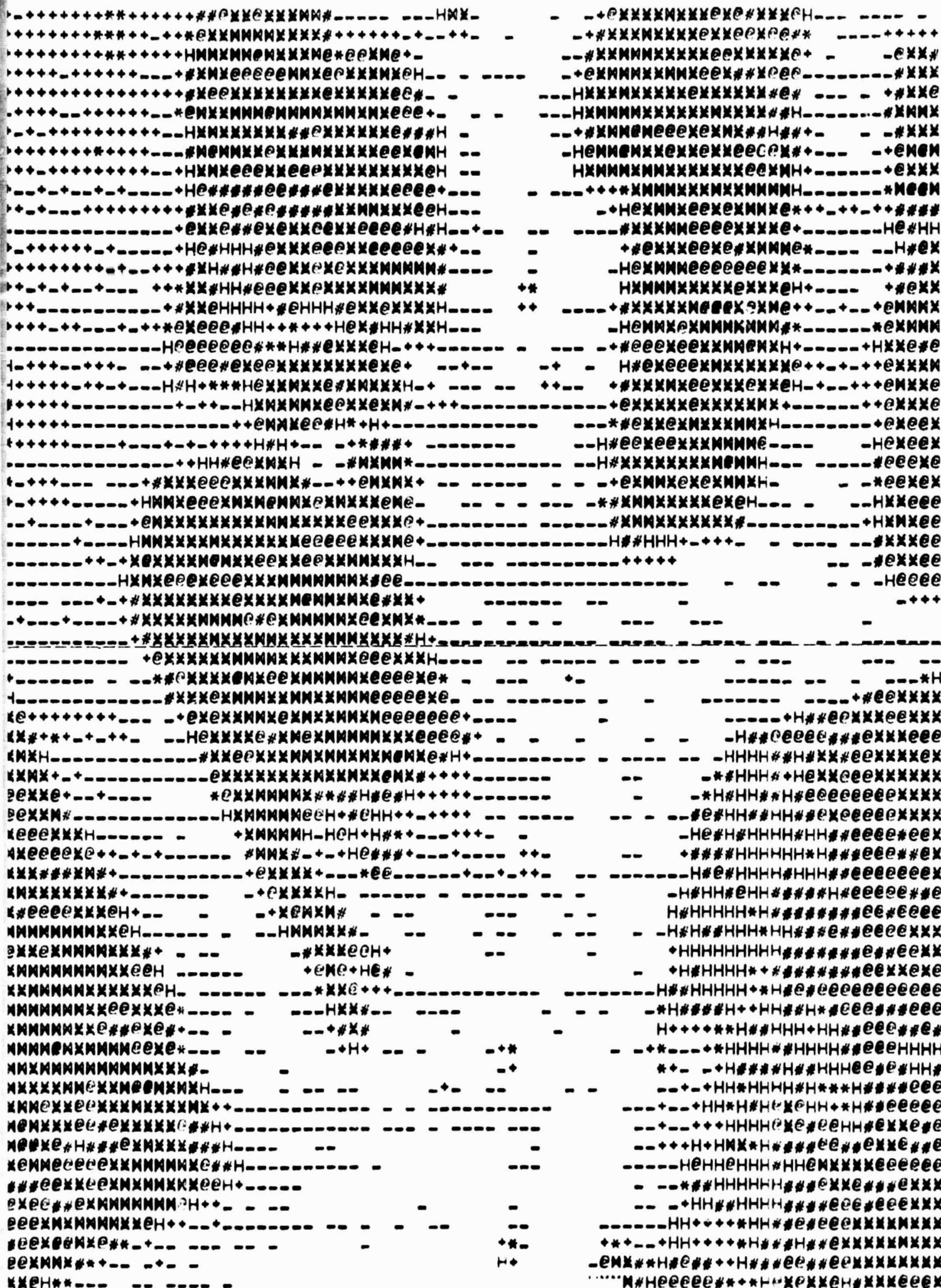


Fig.2 Reclaimed Lands (Band 5)



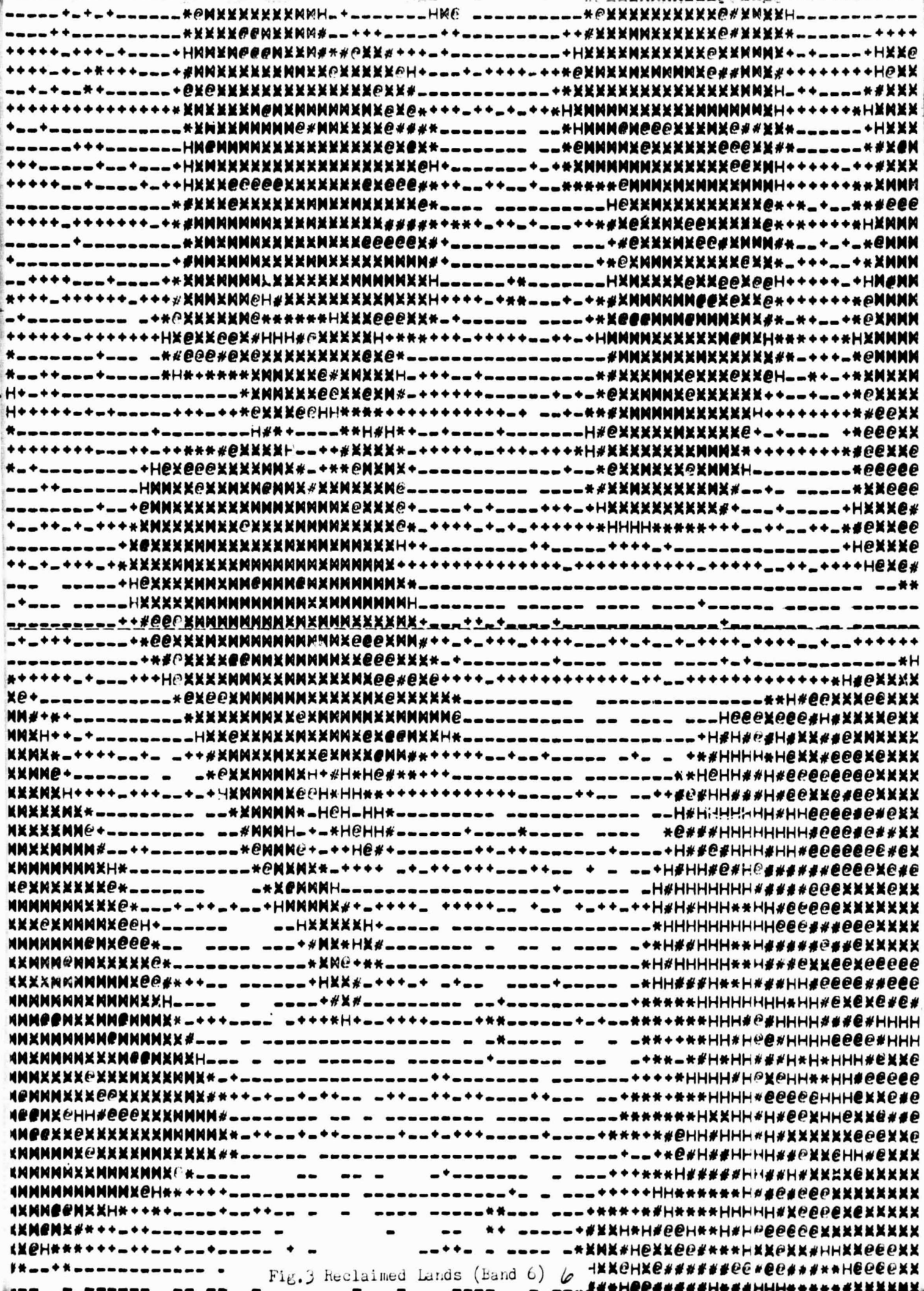


Fig.3 Reclaimed Lands (Band 6)

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Fig.4 Reclaimed Lands (Band 7)

Fig.4 Reclaimed Lands (Band 7)



Fig.5 Rias Shore-lines (Band 4)







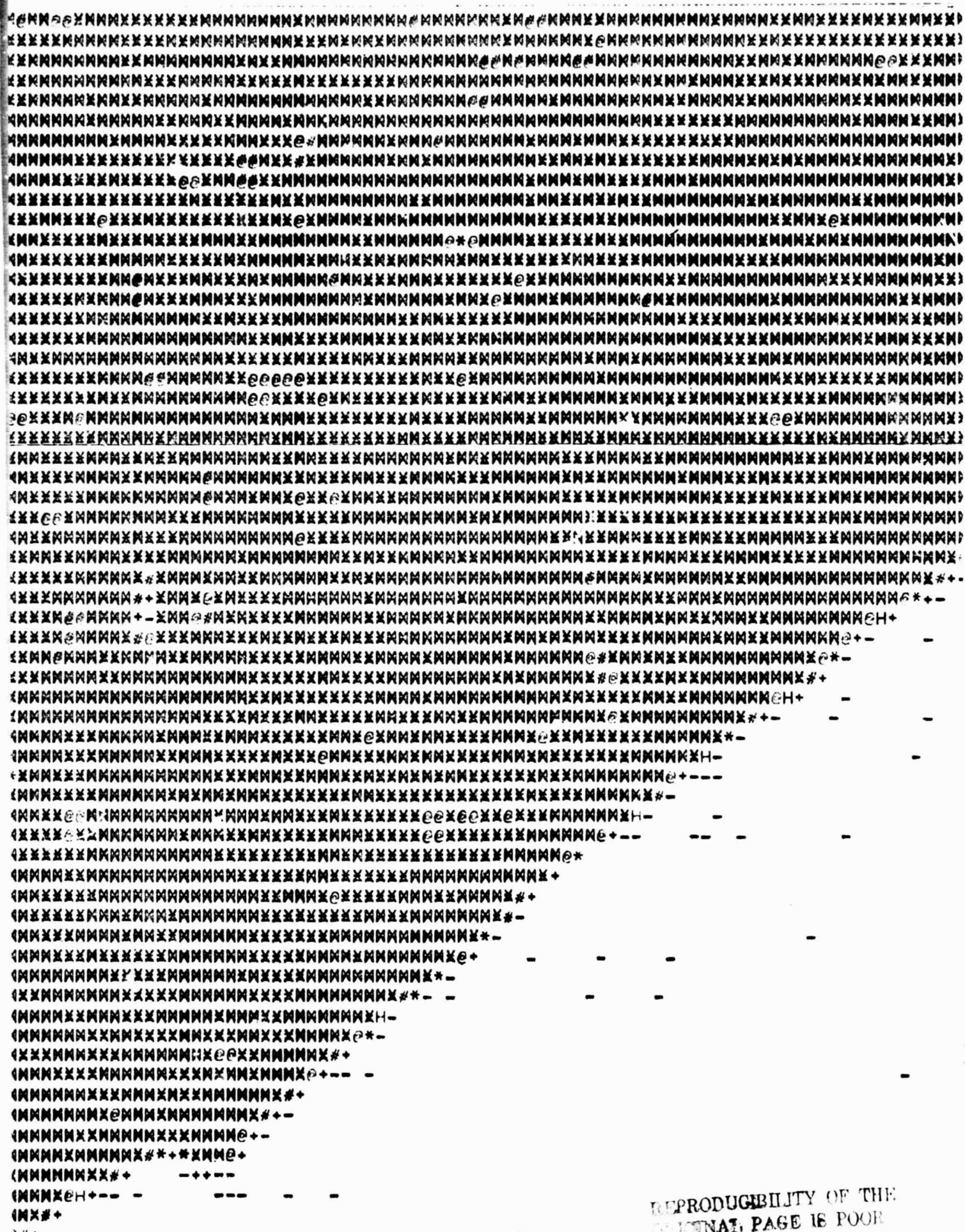
Fig.7 Sand Beach (Band 4) 10



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Fig.10 Sand Beach (Band 7)

—— BAND 4

----- BAND 7

LAND

SEA